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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/868,938	07/18/2001	Kiyoshi Nishio		4331

7590 05/09/2003  
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PO Box 2266 Eads Station  
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EXAMINER

TYLER, CHERYL JACKSON

ART UNIT	PAPER NUMBER
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3746

DATE MAILED: 05/09/2003

10

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/868,938

Applicant(s)

NISHIO ET AL.

Examiner

Cheryl J. Tyler

Art Unit

3746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 March 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 7-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 7-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 19 March 2003 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

**FINAL ACTION**

***Drawings***

1. The corrected or substitute drawings were received on 3/19/2003. These drawings are accepted.

***Claim Rejections - 35 USC § 103***

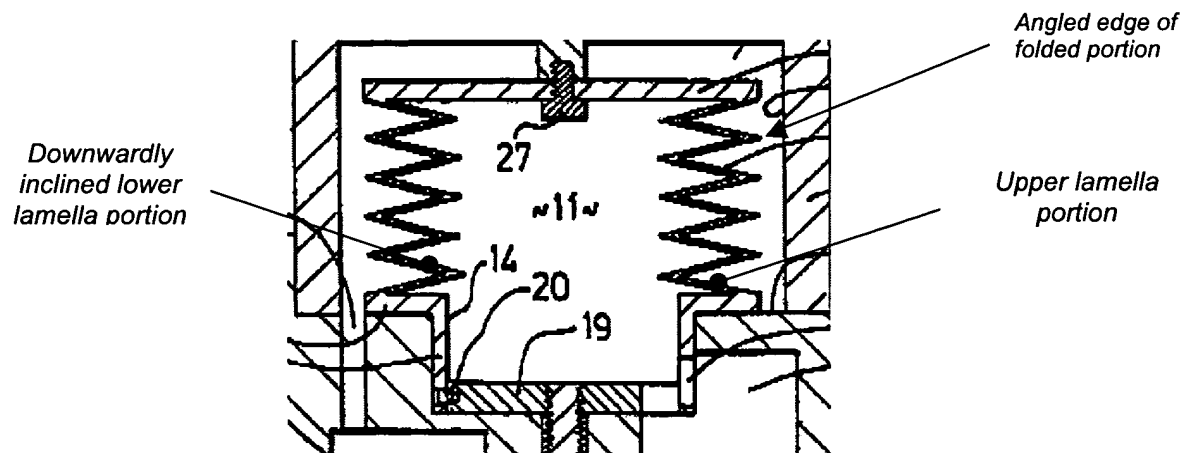
2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 7 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thomin et al. (WO 99/31388) in view of Boedecker et al. (4,655,690). Thomin et al. teach a fluid apparatus having a bellows 12 with extending and contracting portions configured by forming ridge-like folds and valley-like folds 18 in a vertically alternate and continuous manner, that are extendingly and contractingly deformable in an axial direction. The bellows are placed in a pump body 1 such that the axial direction defines a vertical axis. Figure 2 illustrates an inner pumping chamber 11 (corresponding to the claimed liquid chamber) formed inside of bellows 12; an outer pumping chamber 10 (corresponding to the claimed air chamber) formed outside of the bellows 12; and a

suction (or inflow, as in claim 4) port 43 and a discharge (or outflow, as in claim 4) port 45 formed in an inner bottom face of the pump body facing the inner pumping chamber. Figure 2 further illustrates that the bellows are formed into a shape in which a lower one of upper and lower lamella portions of each of the ridge-like folds is downwardly inclined toward the vertical axis, in both the extending and contracting state (see the accompanying figure), and the edges of the folded portion are angled.

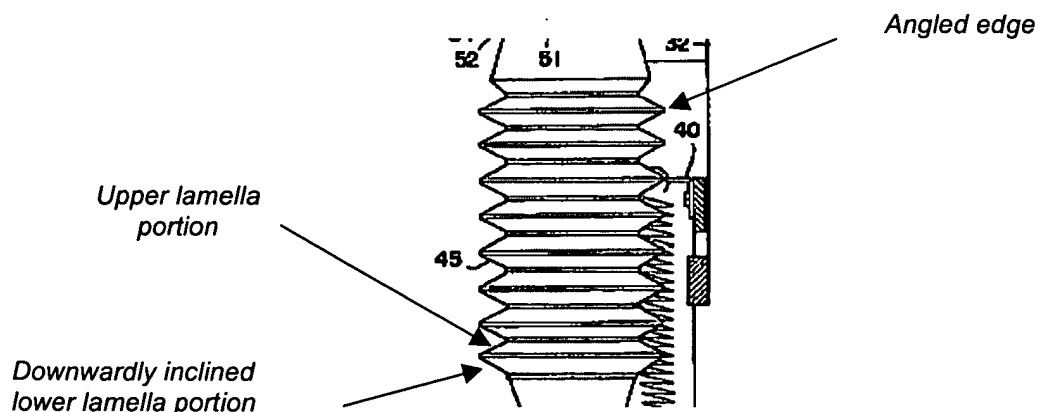


While there are instances of functional language in the claims, a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the structural limitations of the claims, as is the case here, and were not specifically addressed.

While Thomin et al. teach most of the limitations of the claims, they do not explicitly teach that the bellows can be made of polytetrafluoroethylene. Boedecker et al. teach using a "flexible plastic which is resistant to chemicals, preferably polytetrafluoroethylene" (see column 2, lines 28-30). Therefore, it would have been

obvious to one of ordinary skill in the art at the time the invention was made to use a plastic bellows made of polytetrafluoroethylene, as taught in the Boedecker et al. invention, in the Thomin et al. invention in those cases where caustic fluid is to be pumped in a piping in order not to damage the bellows.

4. Claims 7 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hope et al. (4,231,724) in view of Boedecker et al. Hope et al. teach a fluid apparatus having a bellows 45 configured by a pump in which a bellows that has an extending and contracting portion configured by forming ridge-like folds and valley-like folds in a vertically alternate and continuous manner (see column 5, lines 7-13), and that is extendingly and contractingly deformable in an axial direction. The bellows 45 are placed in a main frame 12 (corresponding to the claimed pump body) such that the axial direction extends along a vertical axis, and include a chamber inside of the bellows. Hope et al. further teach a suction port 83 and a discharge port 63 and that the extending and contracting portion of the bellows is formed into a shape in which a lower one of upper and lower lamella portions of each of the ridge-like folds is downward inclined toward the vertical axis, in both the extending and contracting state (see the accompanying figure), and the edges of the folded portion are angled. With regards to



claim 10, since the bellows are exposed to air, it stands to reason that there is an air chamber outside of the bellows. That is, outside of the bellows 4 and within main frame 12, constitutes the claimed air chamber.

While Hope et al. teach most of the limitations of the claims, they do not explicitly teach that the ports are in an inner bottom face of the pump body facing the liquid chamber. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the ports in an inner bottom face of the pump body in order to advantageously reduce the number of elements in the fluid apparatus. By reducing the number of elements, the cost of the apparatus and the manufacturing times may be reduced. Further, it would reduce the overall height and weight of the apparatus by incorporating the ports in the pump body.

While there are instances of functional language in the claims, a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the structural limitations of the claims, as is the case here, and were not specifically addressed.

While Hope et al. teach most of the limitations of the claims, they do not explicitly teach that the bellows can be made of polytetrafluoroethylene. Boedecker et al. teach using a "flexible plastic which is resistant to chemicals, preferably polytetrafluoroethylene" (see column 2, lines 28-30). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a plastic bellows made of polytetrafluoroethylene, as taught in the Boedecker et al.

invention, in the Hope et al. invention in those cases where caustic fluid is to be pumped in a piping in order not to damage the bellows.

5. Claims 8-9 and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hope et al. (mentioned previously), as modified by Boedecker et al. (mentioned previously) in view of Eickmann (4,984,970). Hope et al., as modified by Boedecker et al., teach most of the limitations of the claims, except the inclination angle of the lower lamella portion of the bellows. Eickmann teaches the criticality of choosing the correct angle in order to enable the bellowed portions to withstand higher pressures without failing. It would have been obvious to one of ordinary skill in the art at the time the invention was made to arrive at the cited dimensions, without undue experimentation, in order to withstand the maximum amount of pressure. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to arrive at the cited dimensions, as discussed by Eickmann, in the Hope et al., as modified by Boedecker et al., invention in order to advantageously achieve the maximum amount of pressure in the bellows without the bellows failing.

### ***Response to Arguments***

6. Applicant's arguments with respect to claims 1-6 have been considered but are not persuasive in view of the new ground(s) of rejection. As understood, the applicant argues the Thomin et al. reference includes a bellows in which a fold of the lower portion of the bellows is inclined upwardly and would not discharge slurry effectively. While Thomin et al. do teach that the last bellows is inclined upwardly, the claims do not

cite this limitation. The independent claims merely require that a lower lamella portion is downwardly inclined from a vertical axis. As illustrated in the rejection, the Thomin et al. reference meets this limitation, and the rejection is proper.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., a corner portion of the bellows that is rectangular) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). The applicants merely claim that the edges are angular which is clearly illustrated in both the Thomin et al. and Hope et al. references.

Further, in response to the bellows being made of polytetrafluoroethylene, the Boedecker et al. invention was cited as being an obvious combination with the other cited references. Therefore, the new grounds of rejection are proper and remain

### **Conclusion**

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not



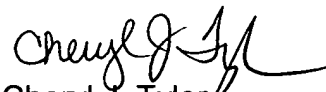
mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

***Contact Information***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cheryl J. Tyler whose telephone number is 703-306-2772. The examiner can normally be reached on Monday-Thursday, 6:00 - 10:30 am.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy S. Thorpe can be reached on 703-308-0102. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9302 for regular communications and 703-872-9303 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0861.

  
Cheryl J. Tyler  
Primary Examiner  
Art Unit 3746

CJT  
May 6, 2003